

grey as in the adults, but fringed at the tips with white; the tail is as in the adult, but narrowly fringed with white. The breast is pale buff, striped with blackish; the flanks are grey, fringed with buffish white. "Naked skin round eye grey, inclining to purplish."

In the adult specimens the only sexual difference that I can find is in the colour of the breast. In the male this is bright vinaceous, while it is much duller and has a leaden-blue tinge in the female.

XXIII.—Notes on the Red-tailed Bush-Lark (*Mirafr erythroptgia*) *. By A. L. BUTLER, Superintendent of Game-Preservation, Sudan.

ON a recent journey in the Bahr-el-Ghazal Province of the Anglo-Egyptian Sudan I saw a great deal of this little-known Lark, and venture to offer some observations on it.

The Red-tailed Bush-Lark is quite a common bird along the Pongo River, on open patches in the forest-country between the Pongo and Chak Chak, on the plains along the Chell River, and on the grassy "khors" which intersect the forest between Chak Chak and Dem Zubeir.

I brought back the following specimens:—

- a. ♂ (breeding). 3.2.07. 20 miles E. of the Pongo.
- b. ♂ (apparently breeding). 5.2.07. Pongo River.
- c. ♂ (not breeding). 5.2.07. Pongo River.
- d. ♂ " 5.2.07. " "
- e. ♂ " 5.2.07. " "

I first met with the species on February 2nd, 1907, while on the march between Kuanga's village and the Pongo, when my attention was attracted by a dark-coloured Lark-like bird which rose from the top of one of the trees scattered over the plain, soared singing into the air for forty or fifty yards, and after a minute or two descended again to the perch from which it started.

Through glasses I watched it repeat this performance

* *Alauda erythroptgia* Strickl.; Sharpe, Cat. B. xiii. p. 619.

several times, and then, concluding that, whatever kind of Lark it might be, it was probably a breeding male with a female sitting close at hand, approached the tree and commenced a careful search for a nest in the vicinity. During this the bird, which was very shy, moved off to some other trees, from which it continued to make little soaring song-flights as before. Failing to find a nest, and being compelled to push on, I went in pursuit of the bird, and managed, with considerable difficulty, to get near enough to shoot it. I then saw that I had got the Red-tailed Bush-Lark at last. It proved, as I expected, to be a breeding male, with the testes very largely developed, and I have little doubt that the hen bird was sitting somewhere close by all the time.

We reached the Pongo at nightfall next day. Close to our camp a few acres of grass and bush were blazing luridly in the darkness. Visiting the spot next morning, I was surprised and delighted to find two or three *hundred* of these Larks collected at the scene of the conflagration, settling on the tree-tops and on the charred bushes, or feeding busily on singed and dead insects among the grass-ashes. On the ground they ran rapidly, and had something of the appearance of large Pipits. Abundant as the birds were, they were exceedingly wild and difficult to approach, and after a considerable—and fruitless—expenditure of .410 ammunition, I had to send for a 12-bore and some No. 6 cartridges; even then I had some difficulty in obtaining four examples. Never liking to kill a large series of the same bird in the same locality, I contented myself with my five specimens, and subsequently left these Larks alone. It was not until my return that I noticed that all my birds were *males*, and I have since greatly regretted my moderation.

I never saw the birds in such numbers again, but I met with pairs and small parties almost every day afterwards.

On the plain by the Chell River at Chak Chak I watched a male soar to a height of perhaps 1000 ft., singing beautifully all the time. I never saw another mount so high.

In the grassy “khors” between Chak Chak and Dem Zubeir these Larks were common, and here on March 9th

Best * told me that he had found a nest with two eggs, but had left them undisturbed, not collecting eggs himself or knowing that I wanted them. However, he seemed confident that he could find the nest again, as it was among some small tussocks of green grass at the edge of a pool. He said that the bird fluttered off the eggs at his feet, feigning partial disablement. Alas! when we revisited the "khor" together there was more than one pool with short green tussocks near it; Best was uncertain about the exact spot—and consequently the eggs of *Mirafra erythroptgia* are still, so far as I know, undescribed!

The flight of these birds is undulating and buoyant, and their wings appear strikingly large and broad when they are passing overhead.

To sum up my field-notes, the Red-tailed Bush-Lark is abundant in the country indicated; it is a bird of powerful flight, probably travelling long distances to water, and rapidly collecting in numbers to follow the track of a grass-fire; it settles a great deal in trees, is on the whole a remarkably shy bird, and appears to breed from January to March, at which season the males sing beautifully while soaring.

Captain Shelley proposes ('Birds of Africa,' iii. p. 15) "the new generic name of *Pinarocorys* for the reception of *Alauda nigricans* Sundev. and *Alauda erythroptgia* Strickl., in which the coloured pattern of the wings is very dissimilar in the males and females, and the crown and back uniform in old birds." And again, in his diagnosis of the genus (*op. cit.* p. 71), he says: "full-plumaged birds have the crown and back uniform brown; quills with or without a rufous pattern, and most of the centre ones have broad pale terminal margins, but these strongly marked variations in the colour of the wings are neither seasonal nor specific characters, but apparently denote the sex."

* Best, whose name will be known to members of the Old Hawking Club, was an English falconer in the service of my companion, Gilbert Blaine. He was very keen on birds, but confined his collecting mostly to the Hawks and to brightly-coloured species.

I do not consider that the alleged sexual differences in the wing-pattern or the unmottled plumage of the back are sufficiently well-established facts to be accepted as generic characteristics, and I prefer to call the bird a *Mirafra*.

Very little appears to be known of the changes of plumage in these two species. As to sexual differences in the wing-pattern, Captain Shelley's own description (p. 74) of "adults" does not bear this out. He describes a ♂, a ♀ juv.?, and a ♀ (of *P. erythropygia*) as having "the outer edges of the quills narrowly edged with buff, with the inner webs nearly of one shade of brown, the pale portions being almost obsolete." He then describes a ♀, a ♂, and a ♀ with "the primaries having nearly the whole of the outer web and the greater portion of the inner web cinnamon, of the same shade as the upper tail-coverts." Wherein, then, lies the *sexual* difference? And it does not seem to be made any clearer in the description of *Pinarocorys nigricans* (p. 72).

In the case of the latter species, the late Dr. Stark ('Fauna of S. Africa: Birds,' vol. i. p. 207) does not mention any sexual differences.

In 'The Ibis' for 1902, p. 292, Capt. Boyd Alexander says: "the adult male of *Mirafra erythropygia* differs from the female in being more rufous on the wings and tail. The primaries are broadly edged with rufous on their outer webs, while the outer tail-feather is entirely rufous."

All of my birds are unquestionably males; one of them was certainly breeding, and another apparently so, though shot from among a large flock. In all five the outer tail-feather has a slanting brown mark occupying the greater part of the terminal half of the inner web.

All of them shew an extremely abraded condition of the plumage of the upper surface. They are practically uniform dark brown above, with the heads slightly darker than the backs, and the centres of the feathers darker than the exposed edges. They have only the narrowest remains of rufous edges to the primaries, which are uniform dark brown above and below.

In my specimen *e* the pale edges of the wing-coverts have practically disappeared; in *a* they remain only on the greater coverts; in *b*, *c*, and *d* they have suffered less from wear. In all the five specimens the first five or six primaries shew no pale ends, the remaining primaries and outer secondaries are in perfect condition, with broad rufous-white ends. In *c* and *d* the dark markings on the crop are more distinctly in the form of spots than in the other examples, in which the markings are heavier and run more together. On the chest they assume a sharply-defined lanceolate form, and in *a* and *e* these pointed markings extend down the whole centre of the breast; in *b* and *c* there are only a few on the breast, *d* the breast is almost uniform buff, with a strong rufous and in suffusion. The under tail-coverts vary from rufous buff to pure cinnamon.

In the dorsal plumage of specimen *b* I find four or five concealed new feathers, not fully developed, of an ashy black, with broad and distinct rufous margins. Abrasion in this species appears to occur very rapidly, but I do not doubt that the new and perfect dorsal plumage is *ashy black, mottled all over with scale-like edgings of bright rufous*. This, indeed, is how the adult male of *Mirafra nigricans* (in winter plumage) is described by Stark, though this plumage would appear to be assumed by *M. erythroptgia* in the *summer*. (It is, by-the-way, a great pity that the dates at which the specimens described, and the specimens recorded from different localities were obtained, are so often omitted in the Bird-volumes of the 'Fauna of South Africa.')

I fear that I have occupied a great deal of space over this one species, but I think that wrong conclusions have been drawn from the limited number of specimens hitherto available for examination, and that this has led to an unsound diagnosis of an unnecessary genus.

In concluding, I would add that the loss of pale margins to the feathers of birds by "abrasion," so complete in *M. erythroptgia*, seems to me to be due to the fibre of the feathers being weaker and more perishable in white or slightly pig-

mented areas, whether these form margins, bars, or spots. This appears to me the only explanation of the vagaries of "abrasion." Restricting the meaning of the word to fair "wear and tear," this certainly would not follow so exactly the boundary-lines of pale margins, serrations, and spots. And yet it is a common thing—especially among small Asiatic Woodpeckers—to find feathers in which pale margins, indentations, and spots have been cut out as cleanly as if eaten by a parasite which preyed on the unpigmented fibre only—the "abrasion" apparently stopping directly the darker colouring is touched.

XXIV.—*On the Tail-feathers of the Grebes.*

By W. P. PYCRAFT, F.Z.S.

THOUGH it is popularly supposed that, in addition to their many other peculiarities, Grebes are tail-less, it is very difficult to find any definite statements on the matter. References to this point, of a more or less general character, are, however, fairly numerous. And of these the following may serve as instances:—

Dr. Sharpe, in the recent edition of the 'Naturalist's Library' (British Birds), says that the Grebes may be distinguished, among other things, "by their obsolete tail, which is not visible." In Yarrell's 'British Birds' Grebes are said to have "no true tail." Macgillivray writes: "tail a slight tuft of minute downy feathers, scarcely distinguishable." Mr. W. R. Ogilvie-Grant, in the 'Guide to the Bird-Gallery of the British Museum,' describes the tail as "inconspicuous, being a mere tuft of downy plumes."

I have, unfortunately, been unable to make my investigations on this subject as complete as I had hoped to do; and this is because I have had to content myself almost entirely with skins. Of fresh specimens, indeed, I have been able to examine only two examples of the Dabchick (*Tachybaptus fluviatilis*), one of which was kindly furnished by Dr. P. L. Selater.